

1. Record Nr.	UNINA9910299958503321
Autore	Zhu Ren
Titolo	Synthesis and Characterization of Piezotronic Materials for Application in Strain/Stress Sensing // by Ren Zhu, Rusen Yang
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-70038-3
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (70 pages) : illustrations (some color)
Collana	Mechanical Engineering Series, , 0941-5122
Disciplina	621.3815363
Soggetti	Nanotechnology Mechatronics Optical materials Electronic materials Lasers Photonics Remote sensing Nanotechnology and Microengineering Optical and Electronic Materials Optics, Lasers, Photonics, Optical Devices Remote Sensing/Photogrammetry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction to the piezotronic effect and sensing applications -- Growth of uniform nanowires with orientation control -- Alignment and transfer of nanowires in a spinning Langmuir film -- Piezotronic effect in a zinc oxide nanowire -- Ultra-sensitive strain/stress sensing -- Closure.-.
Sommario/riassunto	This book explores the new materials and the resultant new field of piezotronics. The growth and alignment of the zinc oxide nanostructures are discussed in detail because of its wide adoption in this field and its significance in optics, health, and sensing applications. The characterization of the piezotronic effect and how to distinguish it from other similar but, fundamentally different effects,

like piezoresistive effect is also considered. The huge potential in the wearable and flexible devices, as well as organic materials, is further examined. The stain/stress sensing is introduced as an example of an application with piezotronic materials. Presents a comprehensive review of the new field of piezotronics; Illustrates how to distinguish the piezotronic effect from other, similar physical phenomena; Explains how to develop novel electronic devices with piezotronic materials; Introduces the organic piezotronic materials for the first time.
